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TITLE: THIN FILM TRANSISTOR

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ABSTRACT:

PURPOSE: To obtain a transparent thin film transistor having a large ON-current and a memorizing property by a method wherein a transition metal oxide is used as a semiconductor layer.

CONSTITUTION: A gate 2 is formed on a substrate 1, then an SiO2 film 3 is deposited on the whole surface, a semiconductor layer 4 is formed, and a source electrode 5 and a drain electrode 6 are formed. Then, an SiO2 film 7 is provided in such a manner that it will not be formed on the electrode 6, and a thin film transistor TFT is formed. In this constitution, a transition **metal oxide which is WO**3 in other words is used. When WO3 is used for the film 4, its ON-current is approximately two figures higher when compared with the TFT whereon an amorphous semiconductor layer is used. Also, as the WO3 is transparent, a transparent TFT is obtained when a transparent electrode is used for electrodes 2, 5 and 6. Besides, a WO3 thin film can maintain the donor position in the film and the width of a depletion layer for a fixed period even after voltage is cut off, and a memorizing property can also be given to the film.